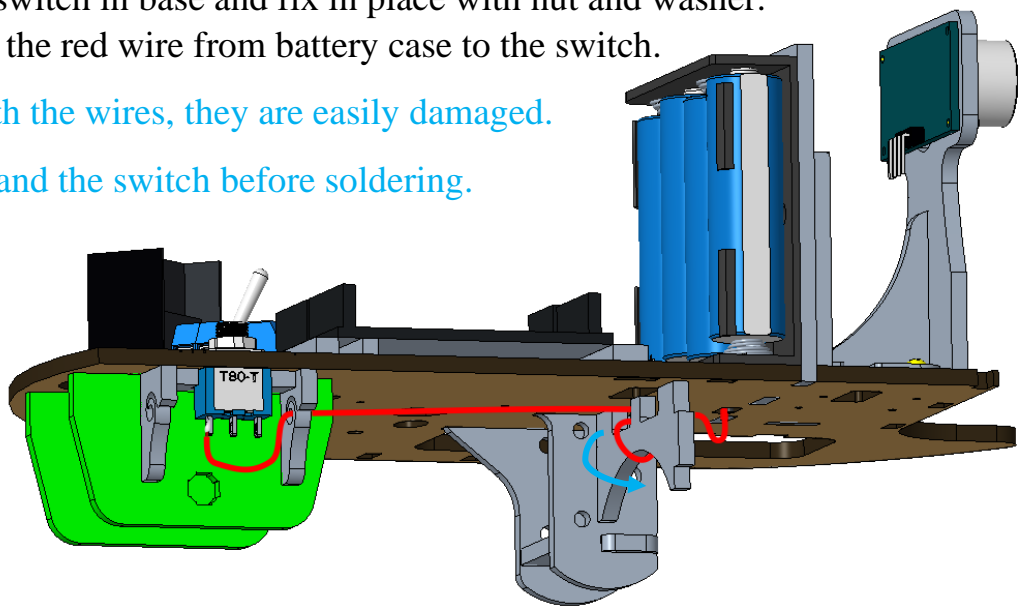


Power

1. Insert switch in base and fix in place with nut and washer.
2. Solder the red wire from battery case to the switch.

Be gentle with the wires, they are easily damaged.

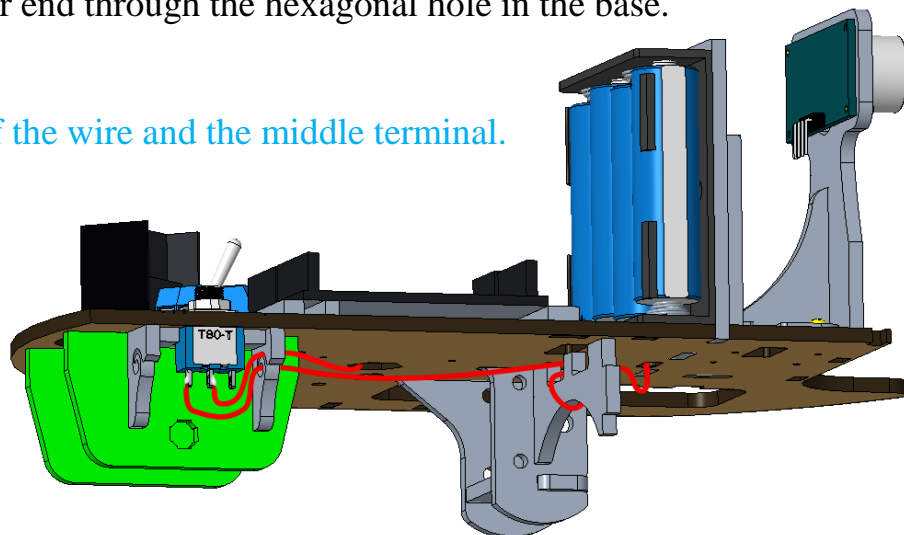
Tin the wire and the switch before soldering.



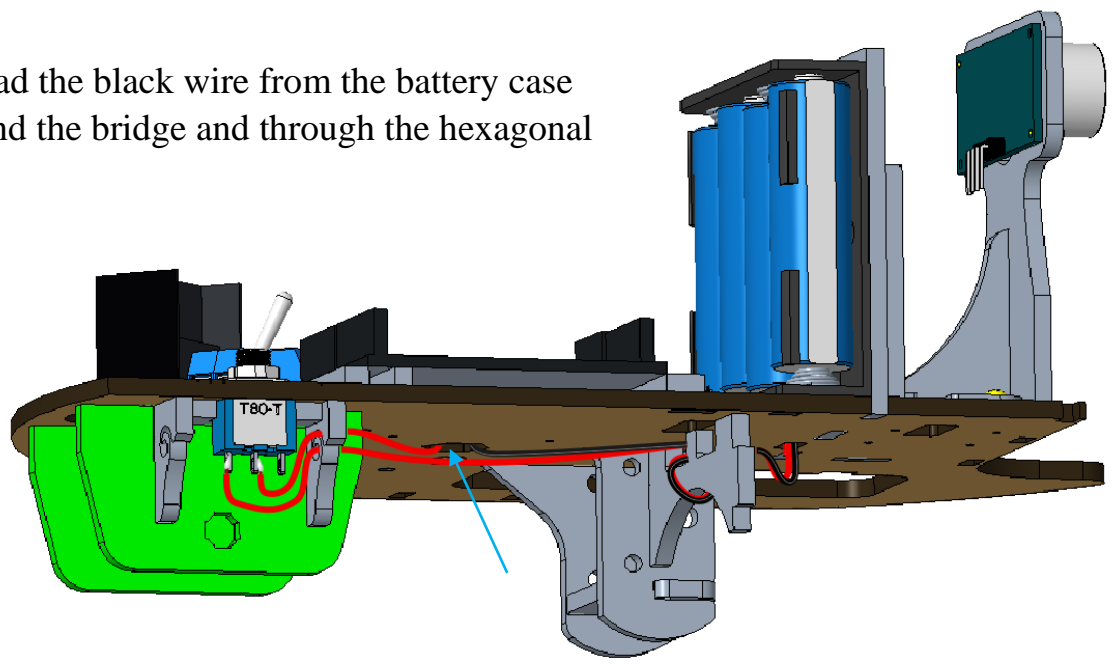
Wrap wire around the bridge. The extra wire comes in handy for mistakes.

3. Solder a 140mm length of red wire to the middle terminal of the switch. Thread the other end through the hexagonal hole in the base.

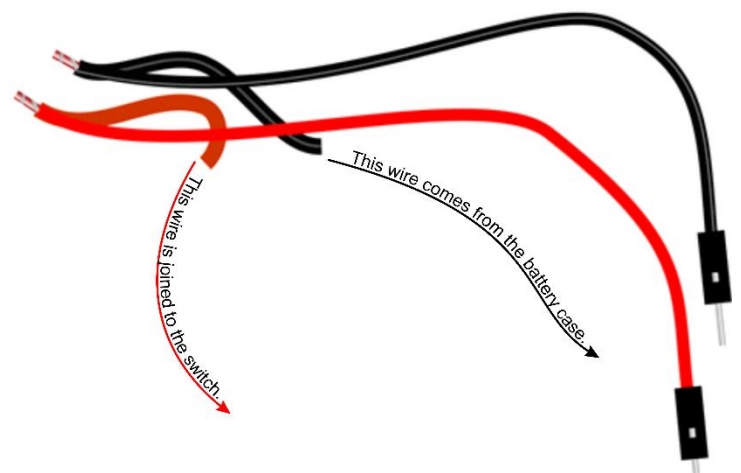
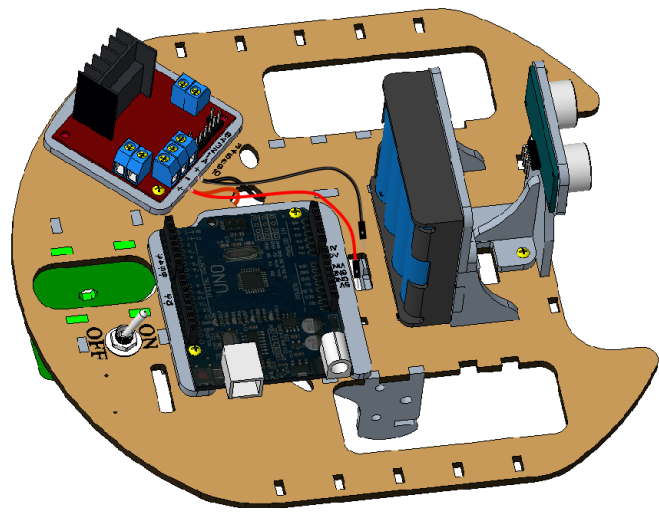
Tin one end of the wire and the middle terminal.



4. Thread the black wire from the battery case around the bridge and through the hexagonal hole.

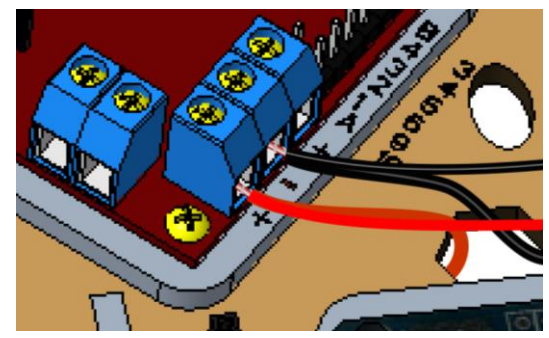
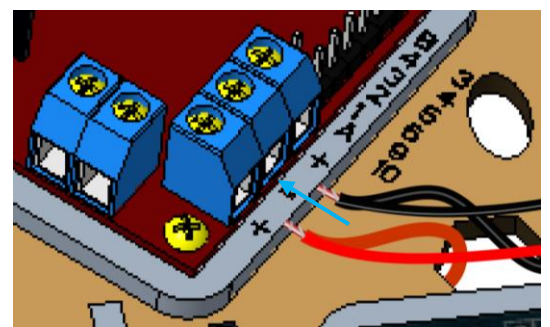


5. Join a 100mm wire with a male dupont fitting to the red and black wires. Twist the wires together, then solder.

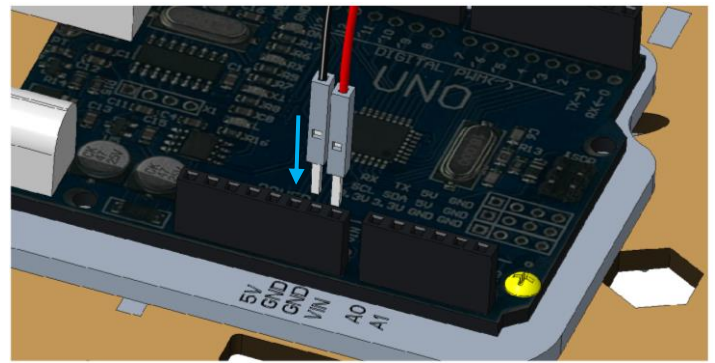


6. Insert wires into blue terminals.

Loosen the screw with a small screwdriver, insert wire. Make sure the **black** wire goes in the middle. Tighten with small screwdriver to hold wires in place.

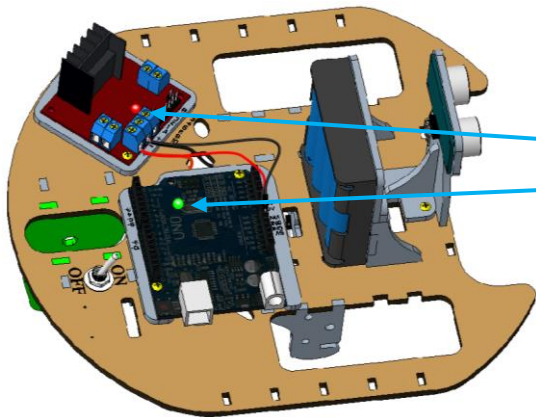


7. Plug the **black** wire into the **GND** socket on the Arduino. Plug the **red** wire into the **VIN** socket on the Arduino.



Make sure you get this correct.

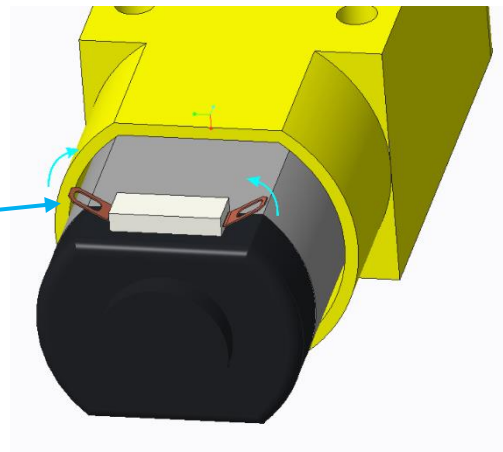
If you get it the wrong way around the Arduino may get damaged.



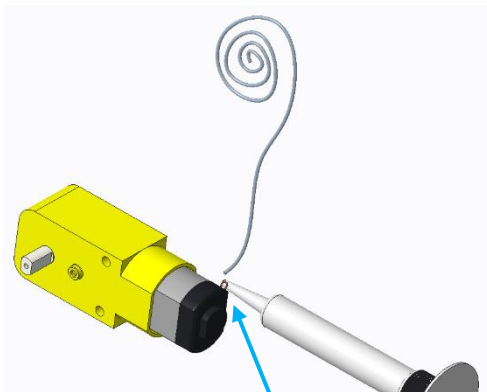
Now is a good time to test the power circuit. Put in 4 AA batteries and switch the robot on. A red light should light up on the motor controller and a green or red light on the arduino.

8. Tin the tabs on the motors.

Bend the tabs.

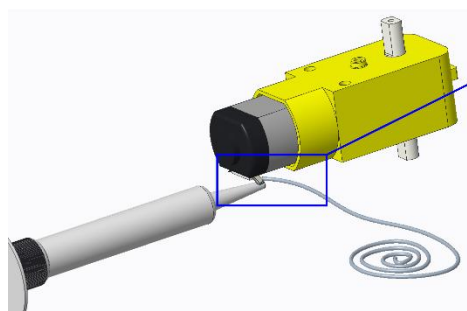
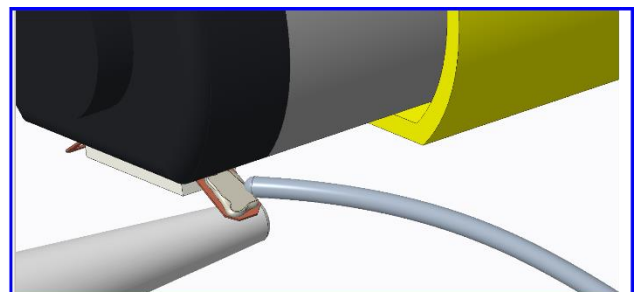


Be careful not to melt the plastic on the motor.

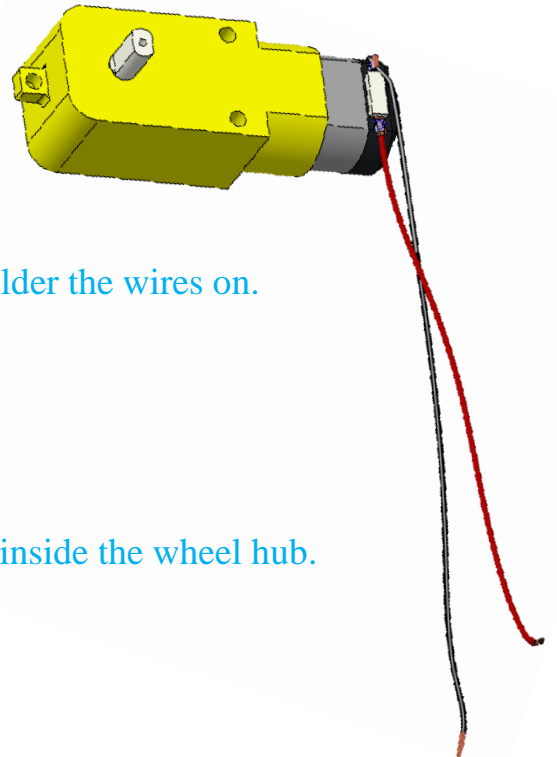
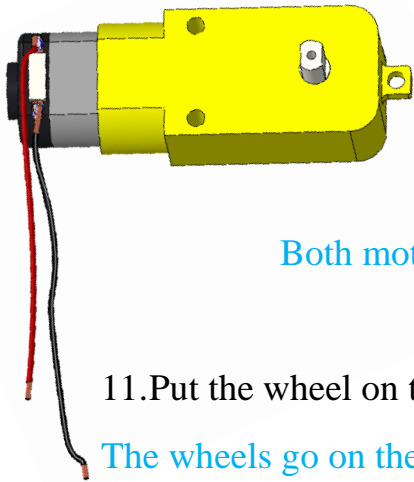


Heat the tabs.

Apply solder.



9. Solder the 70mm wires to the left motor.
10. Solder the 140mm wires to the right motor.

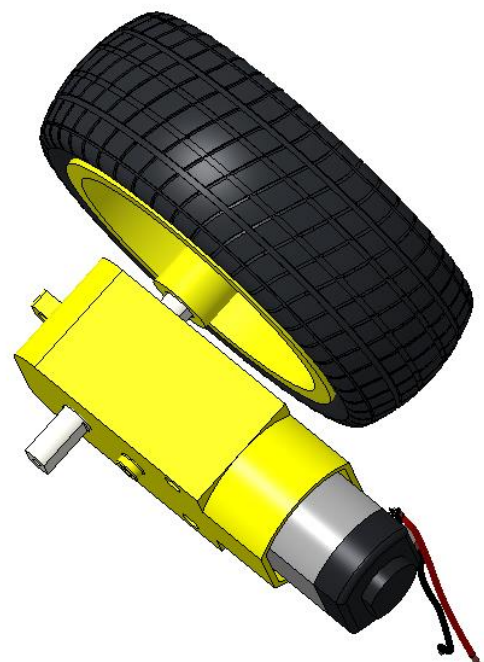
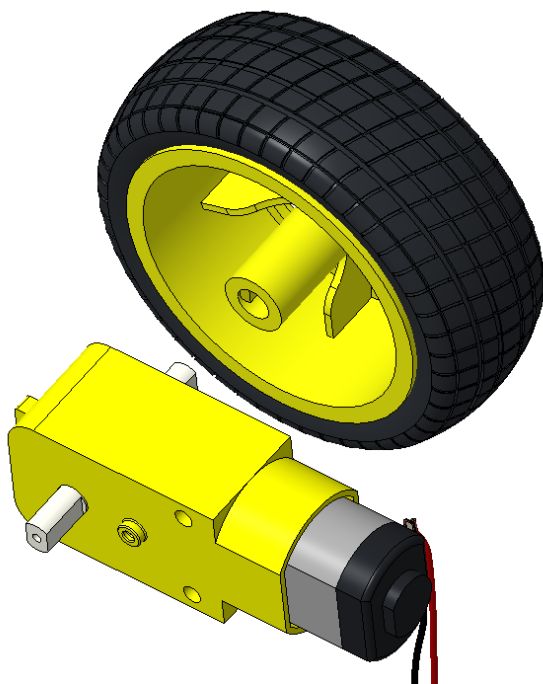


Both motors are the same until you solder the wires on.

11. Put the wheel on the gearbox shaft.

The wheels go on the same side as the wires.

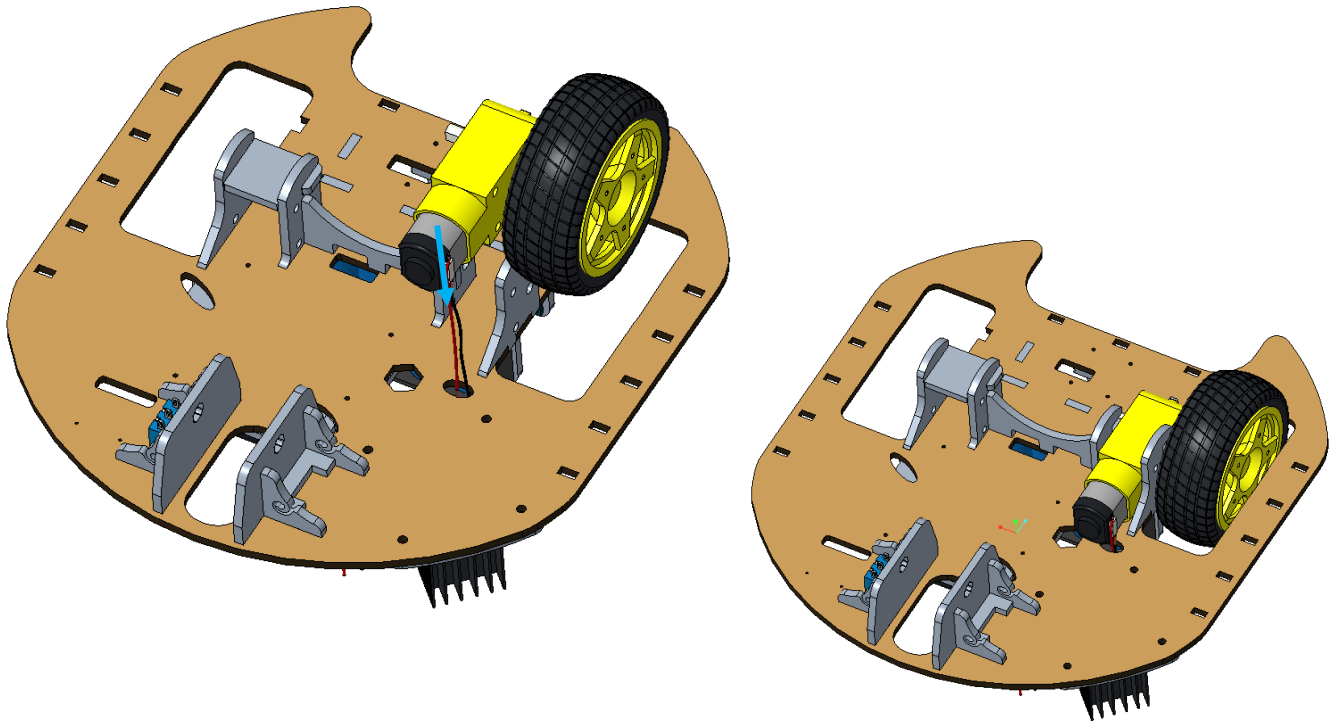
Line up the flat spot on the shaft with the flat spot inside the wheel hub.
Firmly press the wheel onto the axle.



12. Feed the short wires through the oval hole. Push the yellow gearbox into place.

The short wires go through the short oval.

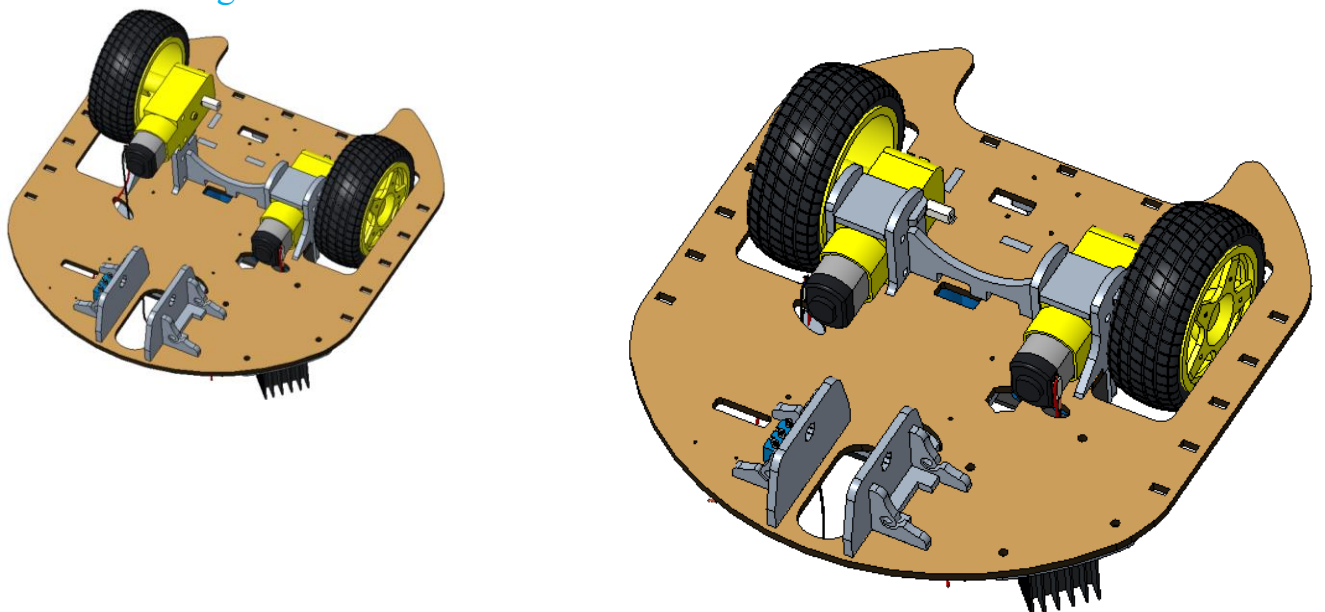
Don't forget to lock it in with the bread.



13. Feed the long wires through the oval hole. Push the yellow gearbox into place.

The long wires go through the long oval.

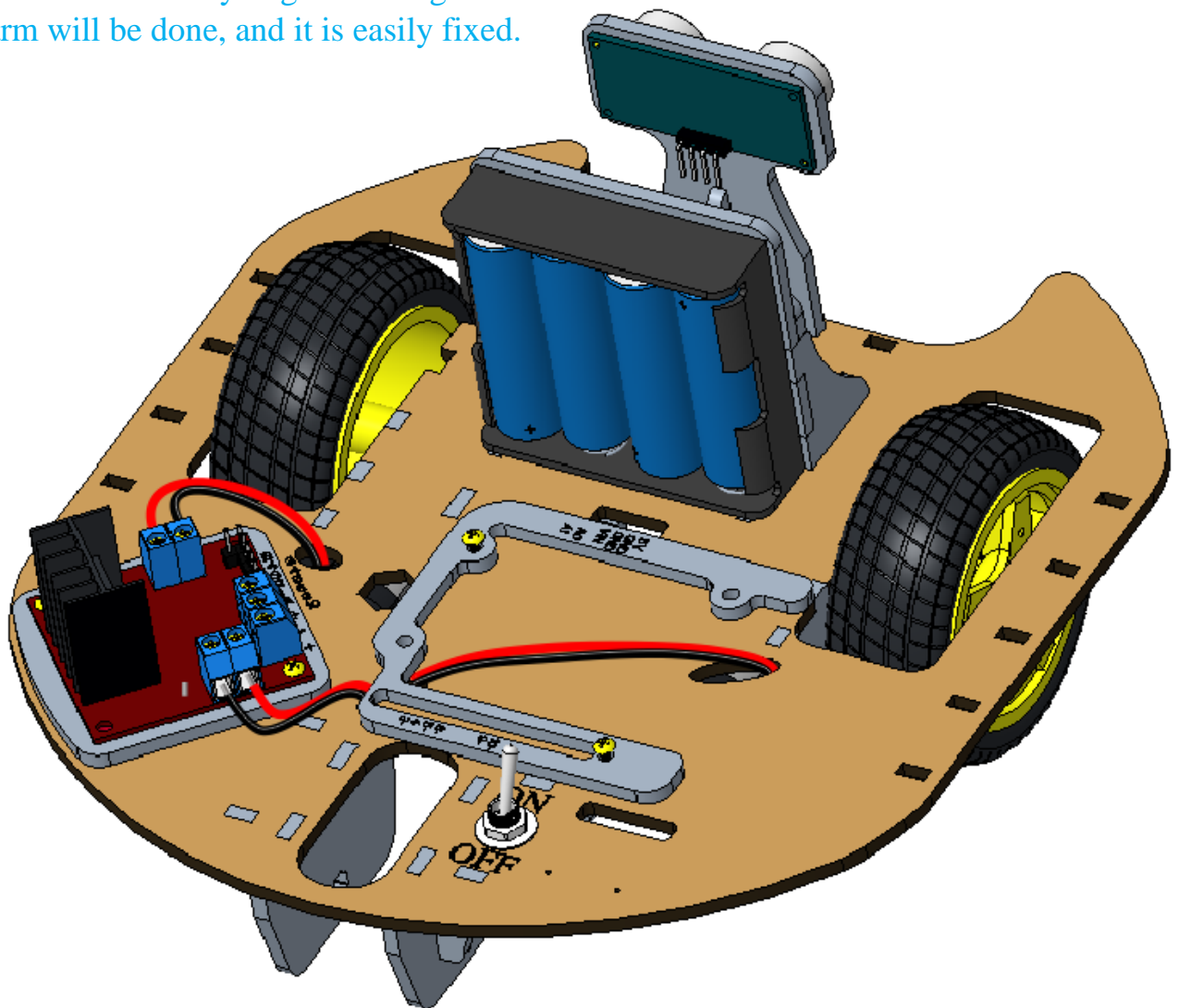
Don't forget to lock it in with the bread.



14. Use a small screwdriver to connect the wires from the motors to the motor controller.

You may have to remove the Arduino to get the long wires through.

It doesn't matter if you get the red and black wires mixed up. The motors will spin backwards if you get it wrong. No harm will be done, and it is easily fixed.



Don't forget to put the Arduino back on.